



Marshall's Safety Day is Oct. 25

Safety Is Universal



Order Chick-Fil-A lunch tickets — at \$2 each — from admin officers by Friday.

Sverdrup selected for engineering, science, technical services contract

Sverdrup Technology Inc. of Tullahoma, Tenn., has been selected to provide engineering, science and technical services at the Marshall Center.

The contract, effective Sunday, includes a two-year performance period plus three one-year priced options. The contract has a potential value of \$300 million over five years.

Under the contract, Sverdrup will provide engineering, scientific and technical services to Marshall Center's Engineering, Flight Projects, Science and Space Transportation Directorates; Systems Management Office, Space Shuttle Projects Office; and the Office of the Chief Financial Officer.

Technical services will support the Space Shuttle, advanced space transportation vehicles, the International Space Station and ground- and space-based scientific research.

Marshall is NASA's lead Center for development of space transportation and propulsion systems, and NASA's leader in conducting research in the near weightlessness of space.

Marshall engineers test photon momentum

by Miria Finckenor

Engineers at the Marshall Center have taken another step toward making interstellar travel a reality by measuring the pressure from solar photon impact.

The energy of sunlight, X-rays, gamma rays and other electromagnetic radiation is carried by photons. Photons have momentum, so they impart a force when impacting a material. But that impact is so small that it is very difficult to measure.

A solar sail uses photon momentum for propulsion. With an enormous, yet lightweight sail, a spacecraft can achieve speeds up to 150,000 mph without using fuel.

Solar power can be simulated in the laboratory using a 2500-watt xenon lamp with a filter to eliminate infrared heating. Marshall's Environmental Effects Group,

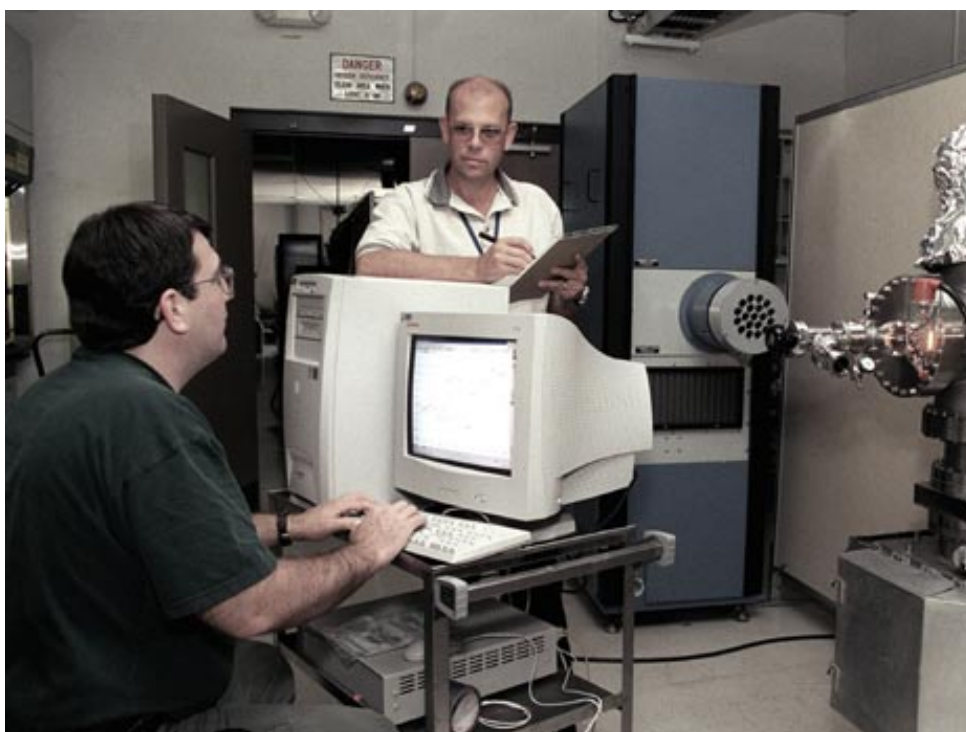


Photo by Adeline Byford, NASA/Marshall Space Flight Center

Perry Gray, left, and David Edwards discuss the photon momentum measurement chamber.

See Photon on page 7

Director's Corner

CFC: Care Enough to Share Enough

Last week many of our employees gathered in Morris Auditorium to kick off this year's Combined Federal Campaign. I was in Florida for the attempted STS-92 launch, which kept me from attending this wonderful event. I am sorry I missed it.



Stephenson

I understand that Liz Hurley and Lee Marshall of WAFF-TV inspired the audience with their stories of children who suffered through the Chernobyl Nuclear Power Plant explosion in the former Soviet Union, and the 400 Alabama children waiting to be adopted who are the focus of a local television show, "Kids to Love."

Through their stories, Liz and Lee helped everyone realize the strong need that's out there for helping those in our community who are less fortunate.

For those of you new to the purpose of the Combined Federal Campaign, let me take this opportunity to share with you its intention. The Combined Federal Campaign supports and promotes benevolent causes through a program that is employee-focused, cost-efficient and effective in providing all Federal employees the opportunity to improve the quality of life for all. It is an incredible opportunity, and I am hopeful that you will answer the call to participate, whether it be monetarily or through the volunteering of your time to this worthy cause.

The Center's participation is strong. Each year Marshall employees have met the challenge to achieve our goal. This year the goal is \$435,000. We beat last year's goal of \$416,000. We had 79 percent participation for a total contribution of \$445,000.

Marshall employees, retired Marshall employees and contractors are eligible to donate to the Combined Federal Campaign. Marshall employees may choose either lump sum donation or payroll deduction. Retirees and contractors may make lump sum contributions. I want to thank each of you in advance for any contribution you can make.

I will go as far as issuing a challenge: if the Center achieves 95 percent or greater participation, I will wash the car of one of our employees — drawn at random — in the parking lot, while you watch.

The campaign runs through Nov. 17. The six-week campaign includes a Speaker Series that started Tuesday and continues through Nov. 3, bus tours to local agencies Oct. 17-19, and Community Service Days through Oct. 20. Four hours of administrative leave have been granted for community service.

For more information, to sign up for bus tours, or volunteer for Community Service Days, visit the Web at:
<http://cfc2000.msfc.nasa.gov>

— **Art Stephenson**
Marshall Center Director

Marshall, Pace & Waite receive NASA Minority Business awards

Pace & Waite Inc., of Huntsville, was named NASA's Women-Owned Business of the Year Sept. 26 by NASA Administrator Dan Goldin at the annual Minority Business and Advocates Awards Ceremony at NASA Headquarters in Washington, D.C.

RS Information Services Inc. was named Minority Contractor of the Year, and Rigging and Welding Specialists Inc. was named Minority Subcontractor of the Year. The awards are presented to minority contractors for their outstanding contributions to the nation's space program.

The Marshall Center was among three NASA field Centers recognized for meeting or exceeding all of their socio-economic business goals for Fiscal Year 1999. Stennis Space Center in Mississippi and the Jet Propulsion Laboratory in Pasadena, Calif., also were recognized.

Pace & Waite Inc. provides prime contract and subcontract services to the Marshall Center. This woman-owned firm is the prime contractor for Configuration Management Services at Marshall and provides high-end engineering support on subcontracts to Boeing, Teledyne, and Sverdrup corporations. The firm was started in 1984 and has 160 employees.

RS Information Services, headquartered in McLean, Va., provides a full range of information technology and engineering services to NASA's Glenn Research Center in Cleveland. It is an 8(a) contractor that was started in 1992 and has rapidly grown to more than 600 employees.

Rigging and Welding Specialists Inc., a Native American-owned 8(a) contractor with 16 employees, is headquartered in Highlands, Texas, and provides specialized transportation services to the Johnson Space Center in Houston. Most notably, it is responsible for transporting critical and sensitive space flight articles in support of various Space Shuttle and International Space Station Programs.

NASA also recognized outstanding advocates for their contributions and innovative approaches to utilizing minority and women-owned businesses. Ken Martindale of Johnson Space Center, Small Business; Rodney J. Etchberger of Johnson Space Center Procurement; and Dr. Shantaram S. Pai, of Glenn Research Center, Technical, received NASA's Exceptional Achievement Medal.

Five Special Recognition Awards were given to individuals for specific outstanding accomplishments: Harry Lectora, president of Caribbean Pictometry in San Juan, Puerto Rico; Yong Kim, president of UTA Inc. of Arlington, Va.; Dr. Edward Stone, director of the Jet Propulsion Laboratory in Pasadena, Calif.; Dr. Calvin Lowe, president of Bowie State University in Bowie, Md.; and Peggy Shreve, president of Frontier Electronic Systems Corporation in Stillwater, Okla.

Space Transportation names new project managers

Michael Phipps has been named project manager of Pathfinder Flight Experiments in the Space Transportation Directorate. He is responsible for flight experiments that will be flown on not only the X-34 and X-37 but many other platforms as well.

Phipps joined Marshall's Shuttle Program Office in 1983

working the Space Shuttle Main Engine, Reusable Solid Rocket Motor and Advanced Solid Rocket Motor project offices in a variety of roles until 1996.

In 1996, he joined the Systems Analysis and Integration Lab working NASA-wide technical standards and the



Phipps

Space Environments and Effects Project. Phipps transferred to the Advanced Space Transportation Program in 1997 where he worked on the Rocket Based Combined Cycle effort, as well as the Space Transportation Research Project. Last year, he joined the Pathfinder Program Office to manage flight experiments related to the X-34 and X-37 vehicles.

Phipps holds a bachelor's degree in industrial engineering from North Carolina State University in Raleigh. He received his professional engineers license in 1997.

He and his wife, Teri, have an 8-year-old son, Zachary.

Mike Ise has been named project manager for the MC-1 engine in the Pathfinder Program Office in the Space Transportation Directorate.

Ise has served as the MC-1 Engine Product Development Team lead since the inception of the project, and most recently

has been serving as the lead systems engineer, overseeing the final stages of design and development testing.

He started his Marshall career in 1986 working data analysis for engine systems in the Science and Engineering Directorate, Propulsion Lab, Engine Systems Branch. He has been lead systems



Ise

engineer on various advanced propulsion engine technologies and the Advance Engine Test Facility.

He holds a bachelor's degree in

mechanical engineering from the University of Alabama in Huntsville.

He and his wife, Donna, have two sons: Rein, 10, and Christopher, 8.

NASA creates new enterprise focusing on biology

NASA News Release

NASA announced last week a restructuring of the Office of Life and Microgravity Sciences and Applications to strengthen the agency's ability to meet the challenges brought about by the growth in areas such as molecular biology, nanotechnology, information technology and genomics.

The reorganization is consistent with NASA Administrator Dan Goldin's vision to create an interdisciplinary research program focused on biology, bringing together physics, chemistry, biology and engineering.

"Through this new enterprise, the best and brightest from across the sciences and across the country can focus their talents on meeting the challenges NASA faces in our future missions," said Goldin.

It will build and further strengthen academic community involvement in all of NASA's scientific and technology missions and, in addition, will establish the organization needed to facilitate effective use of International Space Station facilities for targeted scientific and technology research in a microgravity environment. The new enterprise also will establish the organization needed to transfer scientific and technological research results for Earth benefits.

"There is a new urgency in understanding long-term human health in space," said Goldin. "Given these daunting challenges, NASA must develop and exploit revolutionary technology to maintain crew health and make space-based clinical care truly

space based. Enhancing our understanding of human health is critical."

Under the new plan, the Office of Life and Microgravity Sciences and Applications will be renamed the Office of Biological and Physical Research and enhanced to form a separate enterprise focusing on scientific research. Previously, the Office of Life and Microgravity Sciences and Applications was a part of the Human Exploration and Development of Space Enterprise. The new office will work closely with Human Exploration and Development of Space Enterprise to facilitate long-term exploration of space.

NASA Chief Scientist Dr. Kathie L. Olsen will be acting associate administrator for the new enterprise and will return to her position as chief scientist once a permanent associate administrator is named. Dr. Julie Swain will serve as acting deputy associate administrator.

The Office of Biological and Physical Research will include a wide spectrum of scientific research, including basic, applied, biological, physical, chemical, and biomedical. The office will increase the academic community's involvement in NASA's science and technology missions.

The new enterprise will create an infrastructure that integrates research and technology, broadens NASA's peer-reviewed research programs to strengthen ties with universities, and provides answers to questions fundamental for the future.



Marshall's campaign kicked off Oct. 5



Marshall's Combined Federal Campaign Executive Chairperson, Roslin Hicks, opens the kickoff ceremony last Thursday.



Liz Hurley, WAFF TV, talks about the effect the Chernobyl Nuclear Power Plant explosion in the former Soviet Union had on children.

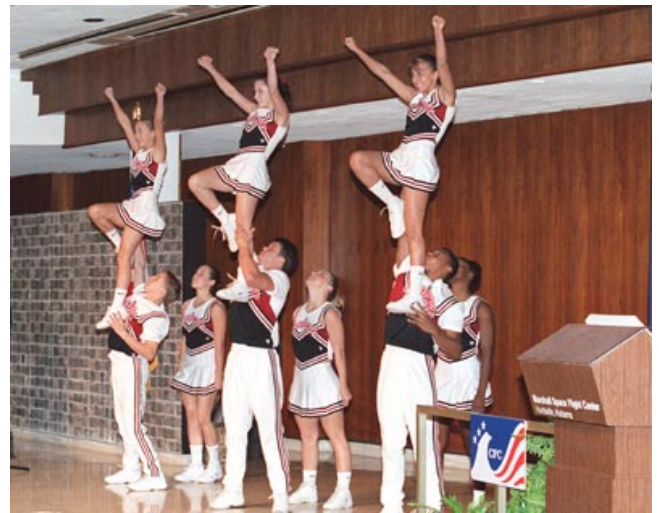


Lee Marshall, WAFF TV, sings the National Anthem and also speaks on behalf of Alabama's children waiting to be adopted.



Amethyst Holmes of the Girl Scouts of North Alabama presents the flag for the Pledge of Allegiance.

Dawn Cross, left, CFC Promotions chairperson, stands with Makaio Krienke, a fourth grader at Franklin School in Harvest, Ala., winner of the CFC poster contest. Makaio is the son of Rodney Krienke of the Subsystems and Component Development Department of Marshall's Space Transportation Directorate.



Sparkman High School's award-winning cheerleading squad, above, and dance team, at left, perform during the kickoff ceremony.



*Photos by Adeline Byford,
NASA/Marshall Space
Flight Center*



Bus tours, Speaker Series continue

Combined Federal Campaign bus tours continue next week with visits to the Senior Center and Harris Home for Children on Tuesday; Christmas Charities Year-Round and United Cerebral Palsy on Wednesday; and Huntsville Hospital and Habitat for Humanity on Thursday. Buses leave the east side of Bldg. 4610 each day at 8:15 a.m., and the north loop of Bldg. 4203 at 8:30. Passengers are asked to be at the designated stops 10 minutes prior to departure times. To sign up for the bus tours, visit the Web at: 2000cfc.msfc.nasa.gov.

The Speaker Series also continues with the following schedule:

- 10-11 a.m., Oct. 12, Bldg. 4202, room 406, Capt. Glenn Riggs, Salvation Army
- 1-2 p.m., Oct. 12, Bldg. 4203, room 3002, Ann Anderson, CASA of Madison County
- 9-10 a.m., Oct. 13, Bldg. 4202, room 326A, Joe McNulty, Children's Hospital
- 1-2 p.m., Oct. 30, Bldg. 4610, room 2081, Lori Laird, St. Jude's Hospital, Research Hospital
- 9-10 a.m., Oct. 31, Bldg. 4487, room C209, Sharon Ball, Hospice Family Care Home
- 9-10 a.m., Nov. 1, Bldg. 4200, room 409, Cheryl Smith, United Cerebral Palsy of Huntsville and Tennessee Valley Inc.
- 1-2 p.m., Nov. 1, Bldg. 4203, room 5002, Laura Richardson, American Cancer Society
- 9-10 a.m., Nov. 2, Bldg. 4612, room 1008, Gerri Mills, Christmas Charities Year-Round Inc.
- 9-10 a.m., Nov. 3, Bldg. 4201, room 437, Mary Lou Kraatz, Alzheimer's Association, North Alabama Chapter

MSFC Guidelines for

PORTABLE LADDER SAFETY



Using the Right Ladder for the Job

The first step is to select the right ladder for the job. Make sure you are familiar with its length limits. Ladders that are too short or too tall for a particular task can lead to an accident.

Stepladders should be no longer than 20 feet.

One-section straight and extension ladders should not exceed 30 feet.

Verify that the ladder has a 1-A Rating.

Ladders shall be approved for electrical use around live electrical parts.

Ladder Condition

Before use, check the ladder to be sure it is in good condition, if not it must be tagged out and repaired before being used.

Look for the following defects:

1. Safety feet are missing/damaged if applicable.
2. Wood Ladders painted.
3. Splinters on wood ladders.
4. Sharp edges on metal ladders.
5. Steps or rungs are missing or loose.
6. Steps or rungs are covered with oil or grease.
7. Steps or rungs are not fitted with slip resistant material.
8. Spreader bar is damaged on the stepladder.
9. Support, braces, bolts or screws are loose.

Engineers needed to help students invent future cities

The Marshall Center is sponsoring the Alabama Regional Competition of the National Engineer's Week Future City Competition Jan. 19, 2001.

This competition was designed to foster science, math and engineering to 7th- and 8th-grade students through hands-on, real world applications. Marshall is the first NASA Center to host the Future City Competition.

Teams consist of five people: a teacher sponsor, an engineer mentor and three students from a school. The competition is comprised of four parts:

- A computer simulation of a future city using the SimCity 2000 software by Maxis
- A city model built to scale by students using their simulated city map
- An essay written by students to

describe their future city and to answer a technical question

- A presentation of the city during the regional competition.

All areas will be judged and totaled to select the winners of regional competition.

Winners of the competition will receive trophies and scholarships toward their science programs, and the first-place winners will receive an all expense paid trip to compete in the National Finals in Washington, D.C. The National Finals of the Future City Competition will be held in conjunction with the National Engineer's Week events Feb. 18-24, 2001.

How can you help in the success of this historic event? You can sign up to be an engineer mentor for a school, or you can help judge during the competition. Area schools needing engineer mentors are:

- Oakwood Elementary School
- Huntsville Middle School
- Madison Academy
- Stone Middle School
- Academy of Science & Foreign Language
- Oak Park Middle School
- Westlawn Middle School
- Brookhaven Middle School
- Riverton Middle School
- Discovery Middle School

Engineer mentors do not have to be Marshall employees. Contractors can also volunteer their engineering expertise.

For more information, visit the Web at: www.futurecity.org.

To participate as an engineer mentor or judge during the competition, call Sonya Hutchinson at 544-3312.

Marshall engineer works on stress corrosion investigations



Photo by Emmett Given, NASA/Marshall Space Flight Center

Torres examines materials being tested for future use on spacecraft and equipment.

Members of Marshall's Hispanic community are making great strides in the development of materials for use in space. Hispanic Heritage Month — which ends Saturday — recognizes the accomplishments of Hispanic employees nationwide.

One Marshall Hispanic employee, Pablo D. Torres, is testing various alloys and welds to determine which work best under different environments, based on the amount of corrosion each item can endure.

As a materials engineer in the Metallic Materials and Processes Group of the Engineering Directorate, he plans and performs investigations on alloys used, proposed for use, or have potential applications in NASA programs.

Among the programs supported with this work are the Super Lightweight Tank, International Space Station, Space Shuttle Main Engine, Redesigned Solid Rocket Motor, Solid Rocket Booster and the X-37.

Results of these investigations are used regularly in design to guide the selection of materials for stress corrosion resistance. These investigations establish the potential of these alloys to perform when subjected to sustained stresses and

exposed to corrosive environments.

"Knowing the stress corrosion susceptibility of materials before they are used is very important in the understanding and prevention of stress corrosion failures," said Torres, originally from Comerio, Puerto Rico.

Sodium chloride environments — salt spray or alternate immersion — are most commonly used for Torres' investigations, but he also performs investigations on alloys in high humidity and other less typical environments, such as cleaners, paint strippers, oxidizers, brines, etc.

"The cleaners and paint strippers evaluated are potential replacements to ozone-depleting chemicals," Torres said. "For one program, the test environment is an acidic brine similar to what will be expected during the operation of the Urine Processor Assembly" — a water-recycling device expected to be used on the International Space Station. Torres also is involved in programs to characterize new non-toxic coatings that are potential replacements to toxic cadmium and chromium coatings.

He routinely generates data on the effect of experimental thermal treatments and welding procedures on the stress corrosion susceptibility of Al-Li 2195 —

the alloy used for the Space Shuttle External Tank. He also investigates new alloys that are promising for aerospace applications, such as bearings and fasteners materials.

Torres, a 1984 graduate of the University of Puerto Rico at Mayaguez, holds bachelor's degrees in chemical engineering and chemistry. He publishes his work in the form of NASA Technical Papers and memorandums. He is frequently sought out by his colleagues on issues related to stress corrosion. His files include more than 30 years of stress corrosion research at Marshall.

Torres recently released MSFC-STD-3029, Guidelines for the Selection of Metallic Materials for Stress Corrosion Cracking Resistance in Sodium Chloride Environments. This document, a reference to prevent stress corrosion failures, is used NASA-wide. He is pursuing the conversion of this standard into a NASA document and has submitted a draft for the creation of an international ISO document based on this document.

Torres joined Marshall in 1984 under the Professional Intern Program. He is married to María Ivette, a registered nurse from Arecibo, Puerto Rico, who runs a day care in Harvest. They have three children, Pablo David, María Emma and Gabriel William, with a fourth child expected by the end of November.

Torres' hobbies include playing guitar and writing poems.

Obituaries

McCartney, Martha S., 62, of Huntsville, died Sept. 22. At the time of her death, McCartney worked as a management support assistant in the Solid Rocket Booster Project Office. She is survived by her daughter, Layne M. Yarbrough.

Kenamer, Lareu P., 81, of Guntersville, Ala., died Sept. 8. She retired from Marshall in 1981 where she worked as a procurement clerk. She is survived by her husband, Rayburn Kenamer.

Yongue, Monroe L., 77, of Hanceville, Ala., died Sept. 6. He retired from Marshall in 1973 where he worked as an electronics technician. He is survived by his wife, Reba Yongue.

Marshall Institute opens

Marshall Center Deputy Director Carolyn Griner opened the Marshall Institute in Bldg. 4200 last Friday. The Institute — based on the “corporate university” concept used by some of the country’s largest and most successful businesses — will provide lifelong learning opportunities for Marshall employees.



Photo by Adeline Byford, NASA/Marshall Space Flight Center

Photon

Continued from page 1

of the Materials, Processes and Manufacturing Department in the Engineering Directorate, has been using solar simulators for materials testing for many years.

Now, they have added an innovative sensor to the vacuum chamber. This has enabled engineers to make the first direct measurements of full solar spectrum photon momentum in vacuum. Previously, photon momentum was demonstrated by measuring the effect of a single-wavelength laser on the movement of a solar sail mounted on a pendulum. Measuring photon momentum through all the ultraviolet and visible wavelengths may lead to better predictions of spacecraft velocity and also tailoring of a solar sail for maximum performance.

Perry Gray, a support contractor with Native American Services Inc., is leading the effort to set up the test system. “Without considering losses in the system and given the power output of the solar simulator, we should have measured a pressure equal to 34 micrograms (one-millionth of a gram) of weight,” said Gray. “We actually measured pressure equivalent to 30 micrograms. “Given the losses due to transmission and reflection, 30 micrograms is believable.”

The solar simulator has a power output equivalent to two-and-a-half suns at Earth’s orbit. Thirty micrograms is equivalent in weight to a single medium-sized grain of quartz sand.

The test capability was funded through the Interstellar Precursor Program, managed by Les Johnson of Marshall’s Space Transportation Directorate. The Interstellar Precursor Program is part of Marshall’s mission to develop advanced space transportation technologies, which include solar sails.

The capability of measuring photon momentum is a significant step in improving the design and reliability of solar sails for interstellar propulsion. Ralph Carruth, leader of the Environ-

mental Effects Group, said, “The momentum transferred to a solar sail by solar photons will depend on such variables as the photon flux, the material reflectivity, the angle at which the light strikes the surface and surface-induced scatter. This system will be important in assessing the influence of these variables.”

The Environmental Effects Group has another unique test system, a combined environmental effects test chamber which can simultaneously expose materials to electrons, protons and two different ultraviolet light sources. Specular reflectance of materials can be measured without breaking vacuum.

Dr. David Edwards, leader of the Space Environmental Effects Team of the Environmental Effects Group, said, “We plan to evaluate how efficient these candidate sail materials are at transferring photon momentum, then re-evaluate their efficiency after exposure to combined effects of the space environment.” The Environmental Effects Group also plans to continue improvement of the test system for increased accuracy of the photon momentum measurements.

A variety of thin polymer films have already been tested for durability in the space environment. SRS Technologies of Huntsville; Entech of Keller, Texas; and Triton Systems Inc. of Chelmsford, Mass.; have provided candidate solar sail films to Marshall for evaluation.

Also planned for testing is an innovative carbon fiber mesh developed by Energy Science Laboratories. This material shows promise because it is as light as a thin polymer film but is more rigid and tolerant of higher temperatures. These materials can now be tested for their photon momentum transfer efficiency in this breakthrough system.

The writer is a materials engineer in the Engineering Directorate.

Employee Ads

Miscellaneous

- ★ 1995 Polaris Sport 400 4-wheeler, front and rear racks, trailer hitch, \$2,500. 230-6382
- ★ Pro-Form T35 treadmill, motor driven, variable speed and elevation, \$350 obo. 881-6040
- ★ Free-standing basketball goal, \$50; 10-speed bike, \$40; Yamaha electronic keyboard, \$100; rubber bed-mat for S-10, \$25. 851-8085
- ★ Ruger "single six" .22 revolver w/original box, Mag/LR included, blue, 4-5/8" barrel, \$275. 325-6000
- ★ Solid wood baby dresser and crib, \$100. 464-0231
- ★ Queen-sized bed; queen comforter set; queen-sized sheet sets; baby swing; baby bouncy seat. 961-9441
- ★ Bedroom set: triple dresser w/mirror, nightstand, double headboard, medium oak, \$325. 880-6146
- ★ Dalmatian Halloween costume for infant, (11-13 lbs.); body suit plus hood w/ears, \$10. 859-8814
- ★ Browning A-bolt II stainless rifle w/BOSS, .243 win., \$530. 247-0083
- ★ King-size wicker headboard, \$155. 883-2237
- ★ Go-cart, \$250; pool, 15'x30', \$800; freezer, \$75; riding mower, \$300; couch, \$50. 931-427-8046
- ★ Sears Craftsman riding lawn mower, 14.5 HP, 5-speed, \$275. 726-0243
- ★ Ambassador fireplace insert, \$250 obo. 830-6584
- ★ Queen-size burnt orange pattern comforter/shams, \$55; king-size comforter, white w/rose/white, \$60. 461-8369
- ★ Blue flame heater, \$175; Apple/PC computer system, \$300; large black desk set, \$90. 828-6213

Vehicles

- ★ 1986 BMW 535i, 5-speed, must sell, \$2,700. 837-4136
- ★ 1999 Oldsmobile Intrigue, white, rear spoiler, 4-door, 3.5, V-6, 31K miles. 247-7945

- ★ 1996 Honda Accord LX, AT, 2-door, green, PW/PDL, a/c, Pioneer CD player, 57K miles, \$13,500 obo. 931-638-0761 day/931-424-6748
- ★ 1994 Nissan Sentra, 96K miles, 4-door, automatic, am/fm tape, a/c, \$3,195 obo. 464-0660
- ★ 1929 Ford Tudor sedan, new frame, Heids front-end, 9" housing, more, \$8,000 obo. 883-6415
- ★ 1990 Honda Accord EX, 4-door, high miles, \$3,000; utility trailer, 5'x8', tilt bed, \$425. 351-7804
- ★ 1996 Dodge Neon, 4-door, auto, am/fm cassette, \$5,000 obo. 533-5362
- ★ 1996 Ford Windstar LX, white/gold, tan leather, captain chairs, dual air, 100K miles, \$8,250. 534-7981
- ★ 1992 Mitsubishi Eclipse, 5-speed, air, 83K miles, \$3,000 obo. 828-6806
- ★ 1993 Nissan King Cab, maroon with gray camper shell, automatic, am/fm/cass., 110K miles, chrome wheels, \$5,000. 880-9025

Found

- ★ Gold/silver pin near Bldg. 4202. Call 544-4758 to identify/claim
- ★ Keys, North Parking Lot, Bldg. 4200. Call 544-4758 to identify/claim

Free

- ★ Tomato cages. 881-6595

Wanted

- ★ Disk or angle grinder, hand held. 883-2757
- ★ Fencing mask, 3-weapon, theatrical-quality (not Olympic) Schlaeger blade for rapier-style combat. 830-2076

Center Announcements

- ☛ **Ethics Training** — Ethics training sessions will be offered at 9 a.m. Oct. 18 and 9 a.m. Oct. 19 in Bldg. 4200, room P-110. For more information, call Lonia Moore at 544-0023.
- ☛ **NCMA Luncheon** — The Huntsville Chapter of the National Contract Management Association will meet for lunch at

11:30 Oct. 19 at the Redstone Officers and Civilian's Club. Cost \$10. Richard Paladino will speak on Program Management — The Relationship With The Contracting Function: How the trials and tribulations of the Program Manager eventually become defined for implementation by the Contracting Office, and subsequent contract management. For reservations, send an email to: dpelham@hiwaay.net or call 533-3954 by Oct. 17.

☛ **MARS Harvest Ball Dinner Dance** —

Tickets for the Oct. 21 Harvest Ball dance are now available from the MARS Ballroom Dance Club. The formal event — beginning at 6:30 p.m. will be held at the Von Braun Center West Exhibit Hall and will feature ballroom music by the Paul Chambers Combo. Tickets — at \$19 per person with a \$3 discount for members — can be purchased from Linda Kinney at 544-0563, Tamara Landers at 544-6818, Pat Sage at 544-5427, Ed Ogozalek at 837-1486, Bob Williams at 544-3998, Hugo Berry at 544-3525, Woody Bombara at 650-0200, and Earl Herndon at 534-7408. To reserve a table for eight, call Bombara.

☛ **Waltz, Swing Lessons** — The MARS Ballroom Dance Club has scheduled waltz on Oct. 16 and swing lessons on Oct. 23 and 30 in the Parish Hall of St. Stephen's Episcopal Church at 8020 Whitesburg Dr. Intermediate classes are 7-8 p.m. and beginner classes are 8-9 p.m. at a cost of \$6 per person per night. For more information, call Woody Bombara at 650-0200.

☛ **Photo Lab Retirees** — Photo Lab retirees meet the first Tuesday each month at 9:30 a.m. at Shoney's on University Drive and Memorial Parkway. For more information, call Carl Dow at 461-8181.

☛ **Nobie Stone Retirement Reception** — A retirement reception for Nobie Stone/SD50 will be held in from 1-3 p.m. Oct. 16 in Bldg. 4481, room 107.

☛ **Shuttle Buddies** — The Shuttle Buddies will meet for breakfast at 9 a.m. Oct. 23 at Mullins Restaurant on Andrew Jackson Way. For more information, call Deemer Self at 881-7757 or Gail Wynn at 852-8189.

MARSHALL STAR

Vol. 41/No. 6

Marshall Space Flight Center, Alabama 35812
(256) 544-0030
<http://www1.msfc.nasa.gov>

The Marshall Star is published every Thursday by the Internal Relations and Communications Department at the George C. Marshall Space Flight Center, National Aeronautics and Space Administration. Contributions should be submitted no later than Monday noon to the Marshall Internal Relations and Communications Department (CD40), Bldg. 4200, room 101. Submissions should be written legibly and include the originator's name. Send electronic mail submissions to: intercom@msfc.nasa.gov The Marshall Star does not publish commercial advertising of any kind.

Manager of Internal Relations
and Communications — Robert Champion
Editor — Debra Valine

U.S. Government Printing Office 2001-633-095-20019

PRE-SORT STANDARD
Postage & Fees PAID
NASA
Permit No. G-27